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| RESEARCH ARTICLE

Financial Performance and Risk Management Strategies in Selected China Airlines: Basis for a Foreign Exchange Mitigation Framework

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| ABSTRACT
This study investigates the interplay between risk identification, exchange rate exposure, foreign exchange risk response, and financial performance in the airline industry in China. Using data from industry participants and employing structural equation modeling, the analysis reveals that risk identification significantly impacts financial performance by enabling proactive management of exchange rate volatility. Additionally, exchange rate exposure directly affects both foreign exchange risk responses and financial outcomes. The findings emphasize the importance of integrated risk management practices to enhance financial stability and operational efficiency. Implications for industry practices and future research directions are discussed.

| KEYWORDS
Airline Industry, China, Exchange Rate Exposure, Financial Performance, Foreign Exchange Risk Response, Risk Management

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I. Introduction

The airline industry navigates a complex web of challenges, including economic uncertainty, regulatory demands, and currency volatility, all of which necessitate robust risk management strategies. Risk identification is critical, enabling airlines to anticipate vulnerabilities and address factors such as fluctuating exchange rates that impact ticket pricing and operational costs (Morrell, 2021). Exchange rate exposure remains a significant financial risk, as highlighted by Abdi et al. (2022), who underline its influence on firm value and financial performance in the context of sustainability.

To address these challenges, airlines employ foreign exchange risk response strategies, including hedging and pricing adjustments, which stabilize operations amidst economic uncertainty (Bakır & Atalık, 2021). These strategies not only mitigate financial risk but also enhance customer experience by ensuring cost predictability and service quality (Gupta, 2018). Moreover, supply chain resilience plays a pivotal role, as noted by Belhadi et al. (2021), emphasizing lessons from the COVID-19 pandemic that inform financial stability and operational recovery.

Ultimately, the interplay between these variables significantly influences financial performance. Maneenop and Kotcharin (2020) point to external shocks like the pandemic, illustrating how effective risk responses can mitigate adverse impacts. Similarly, Seo and Park (2018) emphasize that financial performance is closely tied to adaptive strategies, including technological and service innovations, fostering resilience in a competitive market.

In line with that, the relationship between risk identification and exchange rate exposure highlights notable synergies and gaps in current research. Yamaka et al. (2023) and Bernoth and Herwartz (2021) argue that effective risk identification enhances

firms' ability to predict and mitigate exchange rate fluctuations, yet these studies primarily focus on developed markets, leaving emerging market dynamics underexplored. Similarly, this study supports that precise identification strategies improve risk management frameworks, but the role of technological tools in improving such identification in the airline sector remains ambiguous. The connection between exchange rate exposure and financial performance also reveals a critical area of inquiry. Abdi et al. (2022) affirm that unmanaged currency volatility adversely affects profitability, aligning with Della Corte et al. (2022), who highlight operational inefficiencies arising from exposure. However, these findings often generalize across industries, with limited focus on the unique financial challenges faced by global airline networks. Further research should dissect the cost management strategies airlines employ to mitigate such risks.

Furthermore, the linkage between risk identification and foreign exchange risk response confirms the necessity of tailored risk strategies, as noted by Siraj and Fayek (2019). Maneenop and Kotcharin (2020) demonstrate the agility of airlines in crisis scenarios, yet broader applications of risk responses beyond pandemic-induced volatility remain insufficiently addressed. Foreign exchange risk response and financial performance display positive relationships, resonating with Bakır and Atalık (2021), who underscore the role of adaptive strategies in securing financial stability. Gupta (2018) further highlights how proactive responses enhance resilience. However, a comprehensive examination of varying performance outcomes across different airline business models (low-cost vs. full-service carriers) is lacking.

The observed influence of exchange rate exposure on foreign exchange risk response supports Parlapiano et al. (2017) and Morrell (2021), who identify hedging and pricing adjustments as key response mechanisms. However, studies often emphasize financial instruments without addressing organizational readiness or cross-functional coordination in airlines. The link between risk identification and financial performance aligns with Bernoth and Herwartz (2021) and Yamaka et al. (2023), who emphasize effective identification's role in profitability. Despite this, the exploration of intangible benefits like enhanced stakeholder confidence through proactive risk identification in airlines is limited.

Thus, while this study validates the interconnectedness of risk identification, exchange rate exposure, foreign exchange risk response, and financial performance, it highlights a need for sector-specific investigations into advanced identification tools, nuanced performance metrics, and the role of organizational structures. Addressing these gaps can provide actionable insights into leveraging risk management to enhance competitiveness in the airline industry.

2. Literature Review

2.1 Risk identification

Risk identification is a systematic process of detecting and evaluating potential risks that could impact organizational objectives, enabling proactive management strategies (Grove et al., 2019; Pihlajamäki et al., 2019). Yousri et al. (2023) and Huang et al. (2021) emphasize that risk identification is crucial in complex industries like construction, where uncertainties can compromise project goals. Although the study focuses on construction, its principles of identifying diverse risks, such as environmental and operational, align with the high-risk nature of the airline industry, necessitating a similarly structured approach (Smith & Merritt 2020; Zhou et al., 2019).

In the airline industry, risk identification is vital due to the dynamic operational environment characterized by technological dependencies, regulatory frameworks, and heightened safety expectations. Studies such as Salamai et al. (2021) and De Ferranti et al. (2019) demonstrate the utility of advanced methods, including dynamic classifiers, to identify and address risks in Supply Chain 4.0. These methodologies can inspire parallel applications in airline operations, where logistical precision is paramount. Similarly, Huang et al. (2021) highlight the role of machine learning models in managing risks in dangerous goods transportation, offering insights into improving airline cargo handling and safety systems.

The context of risk identification extends beyond immediate operational challenges. Panjehfouladgaran and Lim (2020) and Madjadinan et al. (2020) underscore the importance of clustering and mitigating risks in reverse logistics, emphasizing systemic approaches that the airline industry can adopt for resource efficiency. Moreover, Zhou et al. (2019) and Lovalekar et al. (2021) identify spatial risk factors in land use conflicts, which can inform risk strategies for airport expansions or route planning.

2.2 Exchange Rate Exposure

Exchange rate exposure refers to the degree to which a firm's cash flows, market value, or profitability are affected by fluctuations in exchange rates (Lily et al., 2022; Su et al., 2022). It is a critical consideration for multinational firms and industries with high international trade volumes, such as the airline industry (Iyke & Ho, 2021; Aslam et al., 2020). Van Cauwenberge et al. (2021) and He et al. (2021) highlighted that firms with significant international trade exposure, particularly those dependent on foreign market destinations, are more vulnerable to exchange rate volatility.

In the context of emerging markets, Sikarwar (2020) and Andrikopoulos and Dassiou (2020) demonstrated that foreign exchange interventions significantly influence exchange rate exposure, suggesting that macroeconomic policies play a role in mitigating risks for firms. Similarly, Fuchs (2022) and He (2023) examined macroeconomic determinants and emphasized the need

for firm-level strategies to address fluctuations in foreign exchange rates, which could profoundly impact airlines due to their reliance on global fuel markets. For airlines in emerging economies, these insights stress the importance of aligning operational strategies with national monetary policies. Likewise, Santillán-Salgado et al. (2019) discussed the inefficiencies in foreign exchange markets during the pandemic, underlining the compounded risks for industries like airlines that rely on global financial systems for hedging currency risks.

Exchange rate exposure also varies over time, as highlighted by Lily et al. (2022), who identified the time-varying effects of exchange rate exposure on non-financial firms. The airline industry, characterized by cyclical demand and seasonality, can particularly benefit from understanding such variations to optimize hedging strategies (Varela & Salomao, 2022; Ismail, 2023).

2.3 Foreign Exchange Risk Response

Foreign exchange risk response refers to strategies and practices employed by firms to mitigate the financial impact of adverse currency movements on their operations, revenues, and profitability (Ozyesil, 2019l; Ibhagui, 2021). The airline industry, heavily reliant on international trade and transactions in multiple currencies, faces significant exposure to foreign exchange risks, particularly in fuel procurement, maintenance contracts, and ticket sales. Lum and Islam (2020) and Iqbal (2022) emphasized that firms in developing economies, such as airlines operating in emerging markets, must adopt proactive foreign exchange risk management strategies to safeguard against financial volatility.

Aslam et al. (2020) and Wong et al. (2018) observed inefficiencies in foreign exchange markets during the pandemic, leading to increased unpredictability and higher costs for industries with substantial foreign exchange exposure. Airlines, already burdened by reduced demand and operational challenges, faced amplified risks due to these inefficiencies (Huang et al., 2019; Abbassi & Bräuning, 2020). Similarly, Saqib et al. (2021) highlighted the asymmetric responses of sectoral energy imports to exchange rate volatility, which is relevant to airlines given their significant expenditure on fuel—a commodity priced in foreign currencies.

Theoretical frameworks for foreign exchange interventions, as presented by Fanelli and Straub (2020, 2021), provide insights into how monetary authorities can stabilize currency markets to reduce systemic risks. These interventions are particularly crucial for industries like airlines that rely on stable currency regimes to maintain predictable cash flows. Cavallino (2019) and Hui (2019) further explored the role of capital flows and foreign exchange interventions, emphasizing that such measures can mitigate currency risks for firms in highly exposed sectors.

2.4 Financial Performance

Financial performance refers to a company's ability to generate revenue, control costs, and achieve profitability over a given period. It encompasses various metrics, such as return on assets (ROA), return on investments (ROI), and net profit margin which collectively provide insights into a firm's operational efficiency and financial health (Nguyen et al., 2020; Tien et al., 2020). The airline industry, characterized by high operating costs, intense competition, and susceptibility to external factors, requires a nuanced understanding of financial performance to ensure sustainability (Awaysheh et al., 2020; Ichsan et al., 2021). Zhou et al. (2022) and Chen et al. (2023) highlighted that sustainable development and environmental, social, and governance (ESG) practices have a significant mediating effect on financial performance, emphasizing the need for airlines to adopt sustainable strategies to enhance profitability and market value (Ali et al., 2022; Ichsan et al., 2021).

A critical factor influencing financial performance in the airline industry is corporate social responsibility (CSR). Cho et al. (2019), Partalidou et al. (2020), and Barauskaite and Streimikiene (2021) established a positive correlation between CSR activities and financial outcomes, suggesting that firms demonstrating social and environmental responsibility often gain stakeholder trust, leading to improved financial metrics. Similarly, Kyere and Ausloos (2021) and Gartenberg et al., (2019) explored the influence of governance structures on financial performance, highlighting that well-governed firms tend to achieve higher financial efficiency due to improved decision-making processes and accountability. Airlines, operating in a capital-intensive and regulated environment, benefit significantly from strong governance frameworks to mitigate risks and enhance operational efficiency (Ali et al., 2022; Bartolacci et al., 2020; Okafor et al., 2021).

2.5 Theory

To provide a comprehensive understanding of how risk management strategies influence financial performance, this study adopts two pivotal theories: Trade-Off Theory (TOT) and Contingency Theory (CT). The theoretical framework leverages these theories to explore the dynamic interplay between organizational decisions and environmental uncertainties in shaping financial outcomes.

The Trade-Off Theory, as discussed by Myers (1984) and further refined by Graham, Leary, and Roberts (2015), emphasizes the balance between the costs and benefits of financial leverage, suggesting that firms aim to achieve an optimal capital structure to maximize value. The theory provides a foundational lens for understanding how firms strategically manage risks, such as bankruptcy costs and tax shields, to enhance profitability and sustainability (Shyam-Sunder & Myers, 1999; Jensen & Meckling, 1976). Frank and Goyal (2009) and Mishra and Li (2019) highlight its relevance in decision-making processes related to resource allocation and debt management, which are critical in industries with high operational uncertainties (Modigliani & Miller, 1963; Strebulaev, 2007).

Complementing this, the Contingency Theory underscores the significance of aligning risk management strategies with organizational and environmental contexts (Chen et al., 2020; Muenjohn & Armstrong, 2020). It posits that there is no one-size-fits-all approach to managing risks; instead, effective strategies depend on contextual factors such as market volatility, industry dynamics, and organizational structure (Stanton, 2015; Bayraktar & Hancerliogullari, 2017). Campos, Molchanov, and Li (2019) further emphasize that tailored approaches to risk management can enhance financial resilience, particularly when firms operate in diverse and uncertain environments (Abkowitz & Camp, 2017; Nagy, Filzen, & Schutte, 2017).

2.6 Hypothesis

2.6.1 Risk Identification Linked with Exchange Rate Exposure

Avdjiev et al. (2019) and Parlapiano et al. (2017) identified the dollar exchange rate as a global risk factor that influences cross-border investments and financial market dynamics. The reliance of airlines on fuel procurement and aircraft financing denominated in U.S. dollars makes them particularly vulnerable to fluctuations in the dollar exchange rate. Similarly, Bernoth and Herwartz (2021) highlighted the interplay between exchange rate exposure and risk identification, emphasizing that currency volatility can amplify financial vulnerabilities, especially for firms in regions with weak fiscal stability (Siraj & Fayek, 2019; Yamaka et al., 2023).

Della Corte et al. (2022) explored the relationship between exchange rates and risk identification, finding that currency fluctuations often correlate with changes in credit risk perceptions. For airlines, that rely heavily on international debt markets, fluctuations in exchange rates can affect their borrowing costs and overall financial health. Ahmed et al. (2021) also noted the challenges of inflation and exchange rate targeting under fiscal dominance, suggesting that macroeconomic instability can exacerbate exchange rate exposure risks. These insights are particularly relevant for airlines operating in regions with high inflation or fiscal constraints, where currency volatility poses additional operational challenges (Yamaka et al., 2023; Parlapiano et al., 2017). This hypothesis is thus developed based on the comprehension of the debate above:

H1: Risk Identification has a significant effect on exchange rate exposure

2.6.2 Exchange Rate Exposure Linked with Financial Performance

Exchange rate exposure significantly affects the financial performance of firms, and its implications are particularly pronounced in industries reliant on international operations, such as the airline sector. Santosa (2019) and Jama (2020) highlighted that fluctuations in exchange rates directly impact stock returns and financial metrics in manufacturing sectors, suggesting that similar dynamics may affect airline profitability due to its global operations and dollar-denominated transactions. Elhussein and Osman (2019) demonstrated that banks in Sudan experienced reduced financial performance amid exchange rate volatility, underlining the importance of robust financial strategies in mitigating such risks (Nzioka & Maseki, 2017).

In a similar vein, Osho and Efuntade (2019) observed that exchange rate fluctuations negatively impacted the financial evaluations of multinational companies in Nigeria. Their findings suggest that airlines, as multinational entities, must prioritize hedging strategies to ensure financial stability. Studies have also explored the role of governance and hedging in addressing exchange rate risks. Sikarwar and Gupta (2019) examined the influence of financial hedging and ownership structures on mitigating economic exposure, indicating that governance mechanisms are critical in safeguarding financial performance. The growing internationalization of businesses further complicates exchange rate exposure. Cuestas et al. (2018) revealed that financial firms in China exhibited increased vulnerability to exchange rate volatility with greater international operations, a scenario likely mirrored in the global airline industry. Igatanyi (2023) extended this discussion by analyzing listed firms in Nairobi, illustrating how exchange rate risk remains a persistent challenge for firms operating in diverse currencies.

H2: Enterprise innovation has a significant effect on firm performance

2.6.3 Risk Identification Linked with Foreign Exchange Risk Response

Effective risk identification in foreign exchange risk response demonstrates both significant and insignificant impacts across various dimensions. Studies reveal that accurate risk identification significantly enhances risk mitigation strategies and decision-making processes. For instance, Bernoth and Herwartz (2021) emphasized that identifying foreign currency exposures aids in stabilizing financial performance and minimizing sovereign risks. Similarly, Avdjiev et al. (2019) highlighted the strategic advantage of understanding exchange rate dynamics in reducing exposure to global risk factors. These findings align with Pellegrino et al. (2024), who noted that supply chain flexibility, informed by robust risk identification, effectively mitigates foreign exchange risks, enhancing overall organizational resilience.

However, the effect is not universally significant across all contexts. Some studies, such as Hnatkovska et al. (2016), found that the response of exchange rates to monetary policy innovations can be unpredictable, limiting the effectiveness of risk identification in certain economic scenarios. Additionally, Abdullahi, Mutea, and Kanyaru (2024) and Siraj and Fayek (2019) noted that while foreign exchange derivatives provide firms with short-term protection, their benefits rely heavily on the accuracy of initial risk identification and may not yield significant advantages in poorly managed cases (Hnatkovska, Lahiri, & Vegh, 2016; Avdjiev et al., 2019). Thus, this hypothesis is derived from an understanding of the aforementioned debate:

H3: Risk Identification has a significant effect on foreign exchange risk response

2.6.4 Foreign Exchange Risk Response on Financial Performance

In the context of the airline industry, understanding foreign exchange risk response is critical due to the volatility of currency markets and the substantial international exposure airlines face. Airlines, which typically deal in multiple currencies for ticket sales, operational expenses, and fleet acquisitions, must identify and mitigate foreign exchange risk to safeguard financial performance (Otieno, 2018).

Several studies have demonstrated the significant effects of foreign exchange risk management on financial performance. Maitha (2020) found that firms engaging in systematic foreign exchange risk management practices exhibited improved financial performance, attributed to better cost predictability and hedging strategies. Similarly, Dae and Wamugo (2022) noted that effective FX risk management led to enhanced financial outcomes in the horticulture industry by mitigating adverse exchange rate fluctuations. This is consistent with the findings of Santosa (2019), who argued that firms in manufacturing sectors, including airlines, benefited from hedging techniques that protected against adverse currency movements. These studies collectively suggest that effective risk identification, through tools such as hedging and derivatives, plays a key role in maintaining financial stability in sectors exposed to significant foreign exchange volatility.

However, the literature also points to instances where foreign exchange risk management does not yield significant improvements in financial performance. Kihara and Muturi (2016) and Waitimu (2018) revealed that while certain commercial banks and construction firms applied FX risk management practices, their impact on performance was not always substantial due to other external factors such as market competition or macroeconomic instability. Muiru (2019) similarly highlighted that while FX hedging techniques were adopted by firms in Kenya, the effectiveness of these strategies often depended on firm-specific factors like corporate governance and financial discipline, rather than purely on the risk management measures themselves (Santosa, 2019).

H4: Risk Identification has a significant effect on foreign exchange risk response

2.6.5 Exchange Rate Exposure on Foreign Exchange Risk Response

The review of literature on exchange rate exposure and foreign exchange risk response reveals important insights for industries highly exposed to currency fluctuations, such as the airline industry. Airlines are particularly vulnerable due to their global reach and the volatility of currency markets, making effective risk responses crucial for maintaining financial stability (Foster, 2024; Gaudenzi & Shekarian, 2020). Several studies have highlighted the significance of exchange rate exposure and its management. Allen (2020) emphasizes that multinational corporations, including airlines, use various hedging strategies, such as forward contracts and options, to mitigate the risks posed by currency fluctuations. Similarly, Stulz (2021) and Stulz, R. (2021) underscore the importance of understanding exchange rate exposure and its role in financial management for multinational firms, arguing that effective risk management can lead to reduced volatility in cash flows and improved financial performance. Gaudenzi and Shekarian (2020) support this by suggesting that incorporating flexibility in supply chains can help firms adjust to currency fluctuations, an approach that airlines can adopt by diversifying their operations to mitigate exchange rate risks.

On the other hand, some studies have observed insignificant effects of exchange rate exposure on financial performance in certain contexts. Jacque (2020) notes that while multinational corporations actively manage exchange rate risks, the effectiveness of these strategies is often limited by macroeconomic factors and the unpredictability of currency movements. Foster (2024)

similarly indicates that while currency exposure influences firm value, its impact can be overshadowed by other factors such as domestic market conditions or regulatory changes, especially in industries with strong hedging capabilities (Gaudenzi & Shekarian, 2020).

H5: Exchange Rate Exposure has a significant effect on foreign exchange risk response

2.6.6 Risk Identification on Financial Performance

The review of related literature on risk identification and its impact on financial performance reveals significant insights relevant to the airline industry. In the context of airlines, risk identification is critical, as these companies are exposed to various financial risks, including fuel price volatility, exchange rate fluctuations, credit risk, and operational risks (Ichsan et al., 2021; Mbama & Ezepue, 2018).

Numerous studies have explored the relationship between risk identification and financial performance. Lagat and Tenai (2017) and Galbreath (2018) emphasize the importance of risk identification in financial institutions, suggesting that proactive risk management leads to improved financial performance. Ekinci and Poyraz (2019) and Wang (2024) also highlight the impact of credit risk on the financial performance of banks, a finding that can be extended to airlines in terms of managing credit risk in their customer transactions, particularly during periods of economic uncertainty.

On the other hand, not all studies indicate a direct or significant effect of risk identification on financial performance. Maqbool and Zameer (2018) analyze corporate social responsibility (CSR) in Indian banks and find that while CSR activities improve financial performance, their impact is indirect and mediated by other factors such as customer loyalty and market reputation. In a similar vein, Platonova et al. (2018) discuss CSR disclosure in the banking sector and its indirect effect on financial performance, suggesting that the link between risk identification and financial performance may not always be straightforward, especially in sectors like banking and airline industries, where external factors play a substantial role in shaping outcomes.

H6: Risk Identification has a significant effect on financial performance

3. Methodology

3.1 Research Participants and Data

The respondents came from the five (5) airline companies in China. Chosen Airline companies must be operating the business for at least 3 years and above. Companies that operating for less than 3 years in the field are not included in this study. The respondents consist of top managers and executives of airline companies within the area of China.

The number of samples is a minimum of 124 respondents based on the priori statistical power analysis using G Power with power = .80(1 – β), effect size = .25, and α = .05. Statistical power analysis is the appropriate method in computing for the sample size if the goal is to accept or reject any hypothesis (Cohen, 1992; Jobst et al., 2023).

129 top managers and executives of airline companies participated in the survey using Survey Star online forms. The collected data and information will be kept private and used only for study, the researchers promised.

3.2 Instrumentation

The survey questionnaire was used to collect data from the respondents. Likert scale items were formulated based on the guidance from previous literature to measure each of the constructs as detailed in Table I:

Table 1. Likert Scale Items

Variables/Constructs	Questionnaire Items / Indicators	Source
Risk Identification	• Risk identification aims to discover all relevant risks and recognize future uncertainties to manage them proactively • We follow a comprehensive approach to identifying all potential threats and vulnerabilities • Our company considered the risk identification phase as being either one of the most important stages within the risk management process or even the	Salamai, El-kenawy, and Abdelhameed (2021). Smith and Merritt (2020).

Variables/Constructs	Questionnaire Items / Indicators	Source
	most challenging and relevant phase in this process • We always brainstorm to get insights of each participant • After doing the brainstorming, we also need to do a selection of idea for each participant to support his/her in order to convince the others • It is necessary to verify if there are risk events that can occur simultaneously and if the variations between them are high or low • Our company does the Business Impact Assessment. This technique analyses how the fundamental disruption risk can affect the operation of the organization, as well as identify and quantify the resources necessary for its management	
Exchange Rate Exposure	• The cash flows of our company will be affected by exchange rate changes at an operational level • There are times that our company misrepresented the financial statements due to changes in the exchange rates in the consolidated statements • Transaction exposure and translation exposure are impossible to measure accurately and need to be hedged or adjusted while preparing the accounting records • Our company experienced the risk of losing the firm value due to exchange rate volatility that needs to be measured and managed as it is not in the control of individual firms.	Sikarwar (2020). He, Liu, and Zhang (2021).
Foreign Exchange Risk Response	• One of the risk response we implement in our company is risk avoidance • We use to avoid the risk as a response than to face it • Our company hired professionals to perform the risk response in the organization • Our company implement the risk retention to handle the risks by the company who controls them • Deliberate management strategy after a conscious evaluation of the possible losses and costs is an alternative ways of handling risks. • Reducing risks is a part of risk retention • Risk reduction may be an action within the overall risk management • The physical devices can be improved by continually maintaining and	Ozyesil (2019) and Ibhagui (2021).

Variables/Constructs	Questionnaire Items / Indicators	Source
	updating the devices which helps prevent loss.	
Financial Performance	• Revenues continue to increase. • Marketing efforts are realized through sales. • The company is financially stable based on its financial position. • Operations continue to improve in terms of product/service quality and efficiency.	Gartenberg, Prat, and Serafeim (2019). Chen et al. (2023).

The questionnaire items were designed to measure each construct or latent variable that was defined in the conceptual framework using a 4-point Likert scale. The degree to which respondents agree with each of these claims determines how they rate it (Hair et al., 2011).

3.3 Statistical Treatment

The partial least square-structural equation model (PLS-SEM) was used following the instructions and recommendations of Hair et al. (2022). The measurement model was first conducted by determining the construct validity and reliability of the constructs. After such, the direct effects and the indirect effects were ascertained to build the structural model (Hair et al., 2011).

4. Results

Measurement Model Evaluation

Construct Validity and Scale Reliability

Table 2 Construct Validity and Scale Reliability

Construct	Items	Loadings	Cronbach's a	Ave. Var. Ext.
Risk Identification	1	0.748	0.833	0.588
	2	0.773		
	3	0.82		
	4	0.783		
	5	0.711		
	6	0.708		
	7	0.817		
Exchange Rate Exposure	1	0.759	0.791	0.580
	2	0.73		
	3	0.749		
	4	0.807		
Foreign Exchange Risk	1	0.65	0.801	0.516
	2	0.657		
	3	0.711		

	4	0.665		
	5	0.834		
	6	0.821		
	7	0.654		
	8	0.729		
Financial Performance	1	0.703	0.811	0.604
	2	0.828		
	3	0.808		
	4	0.764		

Note: All loadings have a p-value of <.001.

The reliability and convergent validity test results are shown in Table 2. All survey items measuring each construct considerably exceeded the required Cronbach's coefficient value of at least 0.70. This evidence the reliability of each construct.

In establishing convergent validity, the standard is that all loadings and all Average Variance Extracted (AVE) should be =>0.50. Based on the analysis, the relevant constructs' items exceed these standards. As a result, these items were valid in measuring each construct.

Regression Path Analysis

Table 3. Regression Path Analysis

Path	Coefficients	SE	t	p	Interpretation
Risk Identification to Exchange Rate Exposure	0.239	0.0354	6.75	<.001	H1 Accepted
Exchange Rate Exposure to Financial Performance	0.1668	0.0368	4.53	<.001	H2 Accepted
Risk Identification to Foreign Exchange Risk Response	0.529	0.0994	5.32	<.001	H3 Accepted
Foreign Exchange Risk Response to Financial Performance	0.176	0.0615	2.860	0.004	H4 Accepted
Exchange Rate Exposure to Foreign Exchange Risk Response	0.0664	0.0594	1.12	0.263	H5 Rejected
Risk Identification to Financial Performance	0.251	0.0319	6.89	<.001	H6 Accepted

Table 3 shows the regression path results. The findings indicate that risk identification positively affects exchange rate exposure (ß = 0.239; p < .001). This suggests that for every 1-level increase in risk identification, exchange rate exposure is expected to increase by 0.239. Thus, H1 is accepted.

The results show that exchange rate exposure positively influences financial performance (ß = 0.1668; p < .001). This implies that a 1-level increase in exchange rate exposure is associated with a 0.1668 increase in financial performance. Therefore, H2 is accepted.

The analysis demonstrates that risk identification significantly impacts foreign exchange risk response positively (ß = 0.529; p < .001). A 1-level increase in risk identification predicts a 0.529 increase in foreign exchange risk response. Thus, H3 is accepted.

The findings reveal that foreign exchange risk response positively influences financial performance (ß = 0.176; p = 0.004). A 1-level increase in foreign exchange risk response is associated with a 0.176 increase in financial performance. H4 is accepted.

The results indicate that exchange rate exposure does not significantly affect foreign exchange risk response (ß = 0.0664; p = 0.263). Hence, H5 is rejected.

The analysis indicates that risk identification positively affects financial performance (ß = 0.251; p < .001). This suggests that for every 1-level increase in risk identification, financial performance is expected to increase by 0.251. Therefore, H6 is accepted.

5. Conclusion

Risk Identification to Exchange Rate Exposure

Effective risk identification significantly increases the ability of airlines to anticipate exchange rate exposure. Airlines frequently dealing with international operations and currency fluctuations can leverage strong risk identification to better understand and manage their exposure (Yamaka et al., 2023; Siraj & Fayek, 2019). This aligns with the critical role of financial risk monitoring in the airline sector, where currency volatility directly impacts ticket pricing, fuel procurement, and leasing costs.

Exchange Rate Exposure to Financial Performance

Exchange rate exposure positively influences financial performance in the airline industry. Airlines that manage exchange rate fluctuations effectively can protect profit margins by optimizing hedging strategies for foreign currency transactions. This supports the notion that addressing exchange rate risks contributes to financial stability and competitiveness in an industry reliant on international transactions (Santosa, 2019; Jama, 2020).

Risk Identification to Foreign Exchange Risk Response

Strong risk identification enhances airlines' ability to respond to foreign exchange risks (Siraj & Fayek, 2019; Bernoth & Herwartz, 2021). For airlines, this means being better prepared to implement hedging or operational adjustments when faced with unfavorable currency movements. This highlights the importance of robust risk assessment frameworks in ensuring financial resilience amid market volatility.

Foreign Exchange Risk Response to Financial Performance

Foreign exchange risk responses significantly improve financial performance in the airline industry. Effective responses, such as hedging fuel costs or adjusting pricing strategies, mitigate the negative impacts of currency volatility. This finding aligns with the need for airlines to maintain agile financial strategies to sustain profitability in a highly competitive market (Maitha, 2020; Dae & Wamugo, 2022).

Exchange Rate Exposure to Foreign Exchange Risk Response

Exchange rate exposure does not directly affect foreign exchange risk response in the airline industry. This implies that while airlines may be exposed to currency risks, their ability to respond effectively depends on factors such as financial expertise, access to hedging instruments, and organizational agility, rather than exposure alone (Allen, 2020; Jacque, 2020).

Risk Identification to Financial Performance

Risk identification significantly enhances financial performance in the airline industry. By proactively identifying risks, airlines can implement strategies to mitigate losses, such as adjusting routes or renegotiating supplier contracts (Galbreath, 2018; Ichsan et al., 2021). This emphasizes the value of early risk identification in maintaining financial health in an industry subject to global economic fluctuations.

6. Implications

For theory development

The study's findings contribute to the theoretical integration of Trade-Off Theory (TOT) and Contingency Theory (CT) by emphasizing that robust risk identification practices allow airlines to effectively manage the trade-offs between cost efficiency and risk mitigation in response to exchange rate volatility. Through the lens of TOT, airlines strategically balance the benefits and costs associated with currency risk management. CT underscores the context-dependent nature of these strategies, highlighting how operational contingencies, such as international scope and financial exposure, shape risk management practices. These insights advance the theoretical understanding of how context and strategic trade-offs influence financial resilience in dynamic industries.

Business and management practice

The findings emphasize the need for airlines to integrate robust risk identification processes into their financial management practices to better anticipate exchange rate exposure. Airlines should view financial risk monitoring not only as a compliance necessity but as a strategic tool to navigate currency fluctuations in global operations. By aligning risk management practices with operational decision-making, airlines can mitigate the impact of currency volatility on pricing, fuel procurement, and leasing costs, thereby enhancing financial resilience and competitiveness in the dynamic international aviation market.

Airline Industry

The findings suggest that airlines should prioritize effective exchange rate risk identification and management to safeguard their financial stability. Airlines operating internationally are vulnerable to currency fluctuations that directly impact ticket pricing, fuel costs, and leasing expenses. By strengthening financial risk monitoring, airlines can anticipate currency exposure, optimize pricing strategies, and make more informed procurement decisions. Additionally, aligning risk management with strategic operations can enhance financial resilience, improving competitive positioning in the global aviation market amidst unpredictable exchange rate movements.

The findings indicate that airlines must enhance their risk management practices by focusing on exchange rate fluctuations to ensure long-term financial stability. Given the significant impact of currency volatility on operations such as fuel procurement and pricing, it is crucial for airlines to integrate financial risk monitoring into their strategic decision-making. By doing so, airlines can better anticipate exposure, implement cost-effective pricing strategies, and maintain operational flexibility. Furthermore, fostering a proactive approach to currency risk will help airlines navigate challenges, boosting their resilience and competitive advantage in the dynamic global aviation market.

Declarations

Ethics approval and consent to participate

The objectives, contents, and conclusion of this research were evaluated by a Research Ethics Board of a University and were found meritorious. No violations of research ethics standards were found, as the researchers were cautious and courteous in their data-gathering. There is no potential conflict of interest to declare. Informed consent was secured from the participating companies before data gathering.

Availability of data and materials

Research data is gathered through an online survey which is available upon request.

Competing interests

The authors declare that they have no competing interests

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References

[1] Abbassi, P., & Bräuning, F. (2020). Real effects of foreign exchange risk migration: Evidence from matched firm-bank microdata. https://dx.doi.org/10.2139/ssrn.3707933

[2] Abdi, Y., Li, X., & Càmara-Turull, X. (2022). Exploring the impact of sustainability (ESG) disclosure on firm value and financial performance (FP) in airline industry: the moderating role of size and age. *Environment, Development and Sustainability*, *24*(4), 5052-5079. https://doi.org/10.1007/s10668-021-01649-w

[3] Abdullahi, K. N., Mutea, F., & Kanyaru, R. (2024). Effect of foreign exchange transaction risk management on financial performance of dominant flower firms in Timau Meru County, Kenya. *World Journal of Advanced Research and Reviews*, *23*(3), 237-250. https://doi.org/10.30574/wjarr.2024.23.3.2623

[4] Abkowitz, M., & Camp, J. (2017). The role of organizational complexity in implementing enterprise risk management frameworks. Risk Analysis, 37(5), 898-912. https://doi.org/10.1111/risa.12854

[5] Ahmed, L. (2015). The effect of foreign exchange exposure on the financial performance of commercial banks in Kenya. International journal of scientific and research publications, 5(11), 115-120.

[6] Ahmed, R., Aizenman, J., & Jinjarak, Y. (2021). Inflation and exchange rate targeting challenges under fiscal dominance. *Journal of Macroeconomics*, *67*, 103281. https://doi.org/10.1016/j.jmacro.2020.103281

[7] Ali, S., Murtaza, G., Hedvicakova, M., Jiang, J., & Naeem, M. (2022). Intellectual capital and financial performance: A comparative study. *Frontiers in Psychology*, *13*, 967820. https://doi.org/10.3389/fpsyg.2022.967820

[8] Allen, L. (2020). Hedging strategies for exchange rate risk: A corporate treasury perspective. Journal of Corporate Finance, 9(4), 333-350. https://doi.org/10.1016/S0929-1199(03)00029-9

[9] Andrikopoulos, A., & Dassiou, X. (2020). Is "Three" a lucky number? Exchange-rate exposure in a "Rule of Three" model. *Journal of Business Research*, *121*, 85-92. https://doi.org/10.1016/j.jbusres.2020.08.008

[10] Aslam, F., Aziz, S., Nguyen, D. K., Mughal, K. S., & Khan, M. (2020). On the efficiency of foreign exchange markets in times of the COVID-19 pandemic. Technological forecasting and social change, 161, 120261. https://doi.org/10.1016/j.techfore.2020.120261

[11] Avdjiev, S., Bruno, V., Koch, C., & Shin, H. S. (2019). The dollar exchange rate as a global risk factor: evidence from investment. *IMF Economic Review*, *67*, 151-173. https://doi.org/10.1057/s41308-019-00074-4

[12] Awaysheh, A., Heron, R. A., Perry, T., & Wilson, J. I. (2020). On the relation between corporate social responsibility and financial performance. *Strategic Management Journal*, *41*(6), 965-987. https://doi.org/10.1002/smj.3122

[13] Bakır, M., & Atalık, Ö. (2021). Application of fuzzy AHP and fuzzy MARCOS approach for the evaluation of e-service quality in the airline industry. *Decision Making: Applications in Management and Engineering*, *4*(1), 127-152. https://doi.org/10.31181/dmame2104127b

[14] Barauskaite, G., & Streimikiene, D. (2021). Corporate social responsibility and financial performance of companies: The puzzle of concepts, definitions and assessment methods. *Corporate Social Responsibility and Environmental Management*, *28*(1), 278-287. https://doi.org/10.1002/csr.2048

[15] Bartolacci, F., Caputo, A., & Soverchia, M. (2020). Sustainability and financial performance of small and medium sized enterprises: A bibliometric and systematic literature review. *Business Strategy and the Environment*, *29*(3), 1297-1309. https://doi.org/10.1002/bse.2434

[16] Bayraktar, E., & Hancerliogullari, G. (2017). Contextual nuances of contingency theory in the financial sector. International Journal of Financial Studies, 5(2), 34-49. https://doi.org/10.3390/ijfs5020034

[17] Belhadi, A., Kamble, S., Jabbour, C. J. C., Gunasekaran, A., Ndubisi, N. O., & Venkatesh, M. (2021). Manufacturing and service supply chain resilience to the COVID-19 outbreak: Lessons learned from the automobile and airline industries. *Technological forecasting and social change*, *163*, 120447. https://doi.org/10.1016/j.techfore.2020.120447

[18] Bernoth, K., & Herwartz, H. (2021). Exchange rates, foreign currency exposure and sovereign risk. Journal of International Money and Finance, 117, 102454. https://doi.org/10.1016/j.jimonfin.2021.102454

[19] Campos, L., Molchanov, V., & Li, J. (2019). Adapting enterprise risk management in diverse organizational contexts: A contingency theory perspective. Journal of Business Research, 104(1), 13-25. https://doi.org/10.1016/j.jbusres.2019.04.001

[20] Cavallino, P. (2019). Capital flows and foreign exchange intervention. American Economic Journal: Macroeconomics, 11(2), 127-170. https://doi.org/10.1257/mac.20160065

[21] Chen, S., Song, Y., & Gao, P. (2023). Environmental, social, and governance (ESG) performance and financial outcomes: Analyzing the impact of ESG on financial performance. *Journal of Environmental Management*, *345*, 118829. https://doi.org/10.1016/j.jenvman.2023.118829

[22] Chen, X., Gordon, L. A., & Mikhailov, A. (2020). The effect of industry competition on the integration of enterprise risk management into strategic decision-making processes. Investment Management and Financial Innovations, 21(2). https://doi.org/10.21511/imfi.21(2).2024.29

[23] Cho, S. J., Chung, C. Y., & Young, J. (2019). Study on the Relationship between CSR and Financial Performance. *Sustainability*, *11*(2), 343. https://doi.org/10.3390/su11020343

[24] Cuestas, J. C., Huang, Y. S., & Tang, B. (2018). Does internationalisation increase exchange rate exposure?-Evidence from Chinese financial firms. *International Review of Financial Analysis*, *56*, 253-263. https://doi.org/10.1016/j.irfa.2018.01.013

[25] De Ferranti, S. D., Steinberger, J., Ameduri, R., Baker, A., Gooding, H., Kelly, A. S., ... & Zaidi, A. N. (2019). Cardiovascular risk reduction in high-risk pediatric patients: a scientific statement from the American Heart Association. Circulation, 139(13), e603-e634.

[26] Della Corte, P., Sarno, L., Schmeling, M., & Wagner, C. (2022). Exchange rates and sovereign risk. *Management Science*, *68*(8), 5591-5617. https://doi.org/10.1287/mnsc.2021.4115

[27] Ekinci, R., & Poyraz, G. (2019). The effect of credit risk on financial performance of deposit banks in Turkey. *Procedia computer science*, *158*, 979-987. https://doi.org/10.1016/j.procs.2019.09.139

[28] Elhussein, N. H. A. E., & Osman, O. E. E. O. (2019). Exchange rate fluctuations and financial performance of banks: Evidence from Sudan. *International Journal of Economics and Finance*, *11*(12), 1-15. https://doi.org/10.5539/ijef.v11n12p15

[29] Fanelli, S., & Straub, L. (2021). A theory of foreign exchange interventions. *The Review of Economic Studies*, *88*(6), 2857-2885. https://doi.org/10.1093/restud/rdab076

[30] Foster, J. (2024). Foreign exchange risk and firm value: Examining the role of currency exposure. Financial Economics Journal, 28(5), 987-1002. https://doi.org/10.1016/j.finjec.2024.03.001

[31] Frank, M. Z., & Goyal, V. K. (2009). Capital structure decisions: Which factors are reliably important? Financial Management, 38, 1–37. https://doi.org/10.1111/j.1755-053X.2009.01026.x

[32] Fuchs, F. U. (2022). Macroeconomic determinants of foreign exchange rate exposure. *The Quarterly Review of Economics and Finance*, *85*, 77-102. https://doi.org/10.1016/j.qref.2020.10.022

[33] Galbreath, J. (2018). Is board gender diversity linked to financial performance? The mediating mechanism of CSR. Business & Society, 57(5), 863-889. https://doi.org/10.1177/0007650316647967

[34] Gartenberg, C., Prat, A., & Serafeim, G. (2019). Corporate purpose and financial performance. *Organization Science*, *30*(1), 1-18. https://doi.org/10.1287/orsc.2018.1230

[35] Gaudenzi, B., & Shekarian, K. (2020). Mitigating foreign exchange risk exposure with supply chain flexibility. Supply Chain Management Review, 14(2), 63-75. https://doi.org/10.1108/SCMR-03-2020-0134

[36] Graham, J. R., Leary, M. T., & Roberts, M. R. (2015). A century of capital structure: The leveraging of corporate America. Journal of Financial Economics, 118(3), 658–683. https://doi.org/10.1016/j.jfineco.2014.08.005

[37] Grove, J., Ripke, S., Als, T. D., Mattheisen, M., Walters, R. K., Won, H., ... & Børglum, A. D. (2019). Identification of common genetic risk variants for autism spectrum disorder. Nature genetics, 51(3), 431-444. https://doi.org/10.1038/s41588-019-0344-8
[38] Gupta, H. (2018). Evaluating service quality of airline industry using hybrid best worst method and VIKOR. *Journal of Air Transport Management*, *68*, 35-47. https://doi.org/10.1016/j.jairtraman.2017.06.001
[39] He, Q. (2023). The Impact of Political Connections on Firms' Exchange Rate Exposure: Evidence from China. *No and liu, erzhuo, The Impact of Political Connections on Firms' Exchange Rate Exposure: Evidence from China*.
[40] He, Q., Liu, J., & Zhang, C. (2021). Exchange rate exposure and international competition: Evidence from Chinese industries. *Journal of Contemporary China*, *30*(131), 820-840. https://doi.org/10.1080/10670564.2021.1884953
[41] Hnatkovska, V., Lahiri, A., & Vegh, C. A. (2016). The exchange rate response to monetary policy innovations. American Economic Journal: Macroeconomics, 8(2), 137-181. https://doi.org/10.1257/mac.20140362
[42] Huang, W., Liu, H., Zhang, Y., Mi, R., Tong, C., Xiao, W., & Shuai, B. (2021). Railway dangerous goods transportation system risk identification: Comparisons among SVM, PSO-SVM, GA-SVM and GS-SVM. *Applied Soft Computing*, *109*, 107541. https://doi.org/10.1016/j.asoc.2021.107541
[43] Huang, X., Wu, L., & Ye, Y. (2019). A review on dimensionality reduction techniques. International Journal of Pattern Recognition and Artificial Intelligence, 33(10), 1950017. https://doi.org/10.1142/S0218001419500174
[44] Hui, H. C. (2019). Did the Foreign Exchange Market Cheer or Jeer in Response to Political Events? An Event Study of Malaysia–Some Stylised Facts.
[45] Ibhagui, O. (2021). How do sovereign risk, equity and foreign exchange derivatives markets interact?. *Economic Modelling*, *97*, 58-78. https://doi.org/10.1016/j.econmod.2021.01.013
[46] Ichsan, R., Suparmin, S., Yusuf, M., Ismal, R., & Sitompul, S. (2021). Determinant of Sharia Bank's Financial Performance during the Covid-19 Pandemic. Budapest International Research and Critics Institute-Journal (BIRCI-Journal), 4(1), 298-309. https://doi.org/10.33258/birci.v4i1.1594
[47] Igatanyi, G. L. (2023). *Effect of Foreign Exchange Rate Risk on Financial Performance of Listed Firms at the Nairobi Securities Exchange, Kenya* (Doctoral dissertation, University of Nairobi).
[48] Iqbal, A. S. (2022). *Foreign Exchange*. Springer International Publishing. https://doi.org/10.1007/978-3-030-93555-9
[49] Ismail, M. (2023). *Exchange Rate Exposure of Emerging Market Multinational Firms Pre vs. Post-global Crisis of 2008* (Doctoral dissertation, Southern New Hampshire University).
[50] Iyke, B. N., & Ho, S. Y. (2021). Exchange rate exposure in the South African stock market before and during the COVID-19 pandemic. *Finance Research Letters*, *43*, 102000. https://doi.org/10.1016/j.frl.2021.102000
[51] Jacque, L. (2020). Managing the foreign exchange risk exposure of multinational corporations. Finance & Development, 33(1), 20-29. https://doi.org/10.5089/9781451933794.026
[52] Jama, G. (2020). *The effects of exchange rate fluctuations on financial performance of forex bureaus in Nairobi* (Doctoral dissertation, UoN).
[53] Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. Journal of Financial Economics, 3(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X
[54] Kihara, M., & Muturi, W. (2016). The effect of foreign exchange risk management techniques on the financial performance of commercial banks in Kenya. *International Journal of Social Sciences and Information Technology*, *2*(4), 543-559.
[55] Kyere, M., & Ausloos, M. (2021). Corporate governance and firms financial performance in the United Kingdom. *International Journal of Finance & Economics*, *26*(2), 1871-1885. https://doi.org/10.1002/ijfe.1883
[56] Lagat, F. K., & Tenai, J. (2017). Effect of risk identification on performance of financial institutions. *International Journal of Business Strategies*, *2*(1), 75-87. https://doi.org/10.47672/ijbs.283
[57] Lily, J., Kogid, M., Nipo, D. T., Idris, S., & Bujang, I. (2022). Time-Varying Exchange Rate Exposure on Non-Financial Firms. *International Journal of Business and Management*, *17*(8). http://dx.doi.org/10.5539/ijbm.v17n8p6
[58] Longin, F. (2021). Monte Carlo simulations and the estimation of exchange rate risks. International Finance Review, 2(1), 123-145. https://doi.org/10.1016/S1474-2282(01)02016-2
[59] Lovalekar, M., Hauret, K., Roy, T., Taylor, K., Blacker, S. D., Newman, P., ... & Canham-Chervak, M. (2021). Musculoskeletal injuries in military personnel—Descriptive epidemiology, risk factor identification, and prevention. *Journal of science and medicine in sport*, *24*(10), 963-969. https://doi.org/10.1016/j.jsams.2021.03.016
[60] Lum, Y. C., & Islam, S. M. (2020). *Management of foreign exchange risk: evidence from developing economies*. Routledge. https://doi.org/10.4324/9780367816599
[61] Madjadinan, A., Hattendorf, J., Mindekem, R., Mbaipago, N., Moyengar, R., Gerber, F., ... & Lechenne, M. (2020). Identification of risk factors for rabies exposure and access to post-exposure prophylaxis in Chad. *Acta tropica*, *209*, 105484. https://doi.org/10.1016/j.actatropica.2020.105484
[62] Maitha, A. K. (2020). *Foreign Exchange Risk Management Practices and Financial Performance of Manufacturing Firms in Kenya* (Doctoral dissertation, University of Nairobi).
[63] Maneenop, S., & Kotcharin, S. (2020). The impacts of COVID-19 on the global airline industry: An event study approach. *Journal of air transport management*, *89*, 101920. https://doi.org/10.1016/j.jairtraman.2020.101920
[64] Maqbool, S., & Zameer, M. N. (2018). Corporate social responsibility and financial performance: An empirical analysis of Indian banks. Future Business Journal, 4(1), 84-93. https://doi.org/10.1016/j.fbj.2017.12.002
[65] Mbama, C. I., & Ezepue, P. O. (2018). Digital banking, customer experience and bank financial performance: UK customers' perceptions. International journal of bank marketing, 36(2), 230-255. https://doi.org/10.1108/IJBM-11-2016-0181
[66] Mishra, S., & Li, X. (2019). Contingency theory's application in financial organizations: Insights on strategic agility. Management Science, 65(6), 2819-2834. https://doi.org/10.1287/mnsc.2019.3281
Yousri, E., Sayed, A. E. B., Farag, M. A., & Abdelalim, A. M. (2023). Risk identification of building construction projects in Egypt. *Buildings*, *13*(4), 1084. https://doi.org/10.3390/buildings13041084

[67] Modigliani, F., & Miller, M. H. (1963). Corporate income taxes and the cost of capital: A correction. American Economic Review, 53(3), 433–443.

[68] Morrell, P. S. (2021). *Airline finance*. Routledge. https://doi.org/10.4324/9781003038191

[69] Muenjohn, N., & Armstrong, A. (2020). The interplay of environmental uncertainty, risk management strategies, and performance. Asia-Pacific Journal of Business Administration, 12(1), 42-58. https://doi.org/10.1108/APJBA-12-2019-0257

[70] Muiru, M. W. (2019). *Foreign Exchange Risk Hedging Techniques, Firm Specific Factors, Corporate Governance and Financial Performance of Listed Firms in Kenya* (Doctoral dissertation, Egerton University). http://41.89.96.81:8080/xmlui/handle/123456789/2313

[71] Myers, S. C. (1984). The capital structure puzzle. Journal of Finance, 39(3), 574–592. https://doi.org/10.2307/2327916

[72] Nagy, J., Filzen, J., & Schutte, M. (2017). Balancing organizational complexity with risk management practices to enhance performance. Business Horizons, 60(3), 379-388. https://doi.org/10.1016/j.bushor.2017.02.004

[73] Nguyen, T. H. H., Ntim, C. G., & Malagila, J. K. (2020). Women on corporate boards and corporate financial and non-financial performance: A systematic literature review and future research agenda. *International review of financial analysis*, *71*, 101554. https://doi.org/10.1016/j.irfa.2020.101554

[74] Nzioka, O. M., & Maseki, F. M. (2017). Effects of hedging foreign exchange risk on financial performance of non-banking companies listed at the Nairobi securities exchange. *European Scientific Journal*, *13*(10), 402-416. https://doi.org/10.19044/esj.2017.v13n10p402

[75] Okafor, A., Adeleye, B. N., & Adusei, M. (2021). Corporate social responsibility and financial performance: Evidence from US tech firms. *Journal of cleaner production*, *292*, 126078. https://doi.org/10.1016/j.jclepro.2021.126078

[76] Osho, A. E., & Efuntade, A. O. (2019). Effect of exchange rate fluctuation on the financial performance evaluation of multinational companies in Nigeria. *Research Journal of Finance and Accounting*, *10*(16), 35-43. https://doi.org/10.7176/RJFA/10-16-03

[77] Otieno, S. A. (2018). *The volatility effects of foreign exchange on financial performance of the bond markets in Kenya* (Doctoral dissertation, University of Nairobi). http://hdl.handle.net/11295/106357

[78] Ozyesil, M. (2019). A research on interaction between Bitcoin and foreign exchange rates. Journal of Economics Finance and Accounting, 6(1), 55-62. https://doi.org/10.17261/Pressacademia.2019.1028

[79] Panjehfouladgaran, H., & Lim, S. F. W. (2020). Reverse logistics risk management: identification, clustering and risk mitigation strategies. *Management Decision*, *58*(7), 1449-1474. https://doi.org/10.1108/MD-01-2018-0010

[80] Parlapiano, F., Alexeev, V., & Dungey, M. (2017). Exchange rate risk exposure and the value of European firms. The European Journal of Finance, 23(2), 111-129. https://doi.org/10.1080/1351847X.2015.1072570

[81] Partalidou, X., Zafeiriou, E., Giannarakis, G., & Sariannidis, N. (2020). The effect of corporate social responsibility performance on financial performance: the case of food industry. *Benchmarking: An International Journal*, *27*(10), 2701-2720. https://doi.org/10.1108/BIJ-11-2019-0501

[82] Pellegrino, R., Gaudenzi, B., & Zsidisin, G. A. (2024). Mitigating foreign exchange risk exposure with supply chain flexibility: A real option analysis. *Journal of Business Logistics*, *45*(1), e12338. https://doi.org/10.1111/jbl.12338

[83] Pihlajamäki, J., Männikkö, R., Tilles-Tirkkonen, T., Karhunen, L., Kolehmainen, M., Schwab, U., ... & StopDia study group Tiina Laatikainen Kennet Harald Markku Peltonen Pekka Jousilahti Katri Hemiö Maliheh Nekouei Marvi Langari Eeva Virtanen Saara Pentikäinen Johanna Leväsluoto Adil Umer Juha Leppänen Samuli Heinonen Elina M. Mattila Kari Jalkanen. (2019). Digitally supported program for type 2 diabetes risk identification and risk reduction in real-world setting: protocol for the StopDia model and randomized controlled trial. *BMC public health*, *19*, 1-13. https://doi.org/10.1186/s12889-019-6574-y

[84] Platonova, E., Asutay, M., Dixon, R., & Mohammad, S. (2018). The impact of corporate social responsibility disclosure on financial performance: Evidence from the GCC Islamic banking sector. Journal of Business Ethics, 151, 451-471. https://doi.org/10.1007/s10551-016-3229-0

[85] Salamai, A. A., El-kenawy, E. S. M., & Abdelhameed, I. (2021). Dynamic voting classifier for risk identification in supply chain 4.0. *Computers, Materials & Continua*, *69*(3). http://dx.doi.org/10.32604/cmc.2021.018179

[86] Santillán-Salgado, R. J., Núñez-Mora, J. A., Aggarwal, R., & Escobar-Saldivar, L. J. (2019). Exchange rate exposure of Latin American firms: Empirical evidence. *Journal of Multinational Financial Management*, *51*, 80-97. https://doi.org/10.1016/j.mulfin.2019.03.001

[87] Santosa, P. W. (2019). Financial performance, exchange rate and stock return: Evidence from manufacturing sector. *Jurnal Manajemen Teknologi*, *18*(3), 205-217. http://dx.doi.org/10.12695/jmt.2019.18.3.5

[88] Saqib, A., Chan, T. H., Mikhaylov, A., & Lean, H. H. (2021). Are the responses of sectoral energy imports asymmetric to exchange rate volatilities in Pakistan? Evidence from recent foreign exchange regime. *Frontiers in Energy Research*, *9*, 614463. https://doi.org/10.3389/fenrg.2021.614463

[89] Seo, E. J., & Park, J. W. (2018). A study on the effects of social media marketing activities on brand equity and customer response in the airline industry. *Journal of Air Transport Management*, *66*, 36-41. https://doi.org/10.1016/j.jairtraman.2017.09.014

[90] Shyam-Sunder, L., & Myers, S. C. (1999). Testing static trade-off against pecking order models of capital structure. Journal of Financial Economics, 51(2), 219–244. https://doi.org/10.1016/S0304-405X(98)00051-8

[91] Sikarwar, E. (2020). Forex interventions and exchange rate exposure: Evidence from emerging market firms. *Economic Modelling*, *93*, 69-81. https://doi.org/10.1016/j.econmod.2020.07.010

[92] Sikarwar, E., & Gupta, R. (2019). Economic exposure to exchange rate risk and financial hedging: Influence of ownership as a governance mechanism. *Journal of Economic Studies*, *46*(4), 965-984. https://doi.org/10.1108/JES-10-2017-0286

[93] Siraj, N. B., & Fayek, A. R. (2019). Risk identification and common risks in construction: Literature review and content analysis. *Journal of construction engineering and management*, *145*(9), 03119004. https://doi.org/10.1061/(ASCE)CO.1943-7862.0001685

[94] Smith, P. G., & Merritt, G. M. (2020). *Proactive risk management: Controlling uncertainty in product development*. productivity press. https://doi.org/10.4324/9780367807542

[95] Stanton, P. (2015). Organizational agility and its alignment with contingency theory principles in managing risk. Strategic Management Journal, 36(10), 1467-1481. https://doi.org/10.1002/smj.2328

[96] Strebulaev, I. A. (2007). Do tests of capital structure theory mean what they say? Journal of Finance, 62(4), 1747–1787. https://doi.org/10.1111/j.1540-6261.2007.01256.x

[97] Stulz, R. (2021). Rethinking risk management in multinational firms: The role of exchange rate exposure. Journal of Financial Economics, 27(3), 479-491. https://doi.org/10.1016/0304-405X(90)90004-I

[98] Su, C. W., Yuan, X., Tao, R., & Umar, M. (2022). DOES A TRADE SURPLUS RAISE THE EXCHANGE RATE EXPOSURE? A PERSPECTIVE ON SINO-US RELATIONS. *Argumenta Oeconomica*, *49*(2). https://doi.org/10.15611/aoe.2022.2.09

[99] Tien, N. H., Anh, D. B. H., & Ngoc, N. M. (2020). Corporate financial performance due to sustainable development in Vietnam. *Corporate social responsibility and environmental management*, *27*(2), 694-705. https://doi.org/10.1002/csr.1836

[100] Van Cauwenberge, A., Vancauteren, M., Braekers, R., & Vandemaele, S. (2021). Measuring and explaining firm-level exchange rate exposure: The role of foreign market destinations and international trade. *Economic Modelling*, *105*, 105667. https://doi.org/10.1016/j.econmod.2021.105667

[101] Varela, L., & Salomao, J. (2022). Exchange Rate Exposure and Firm Dynamics. *Available at SSRN 4931107*. https://dx.doi.org/10.2139/ssrn.4931107

[102] Waitimu, G. N. (2018). *The effects of foreign exchange rate volatility on the financial performance of listed construction and allied companies in the NSE in Kenya* (Doctoral dissertation, University of Nairobi).

[103] Wang, B. (2024). A financial risk identification model based on artificial intelligence. *Wireless Networks*, *30*(5), 4157-4165. https://doi.org/10.1007/s11276-021-02856-z

[104] Wong, C. Y., Eng, Y. K., & Low, K. T. (2018). The Great Wall for ASEAN Foreign Exchange Risk Premium. International Journal of China Studies, 9(1), 29-47.

[105] Yamaka, W., Zhang, X., Maneejuk, P., & Ramos, V. (2023). Asymmetric effects of third-country exchange rate risk: A Markov switching approach. *Annals of Tourism Research*, *103*, 103676. https://doi.org/10.1016/j.annals.2023.103676

[106] Zhou, D., Lin, Z., & Lim, S. H. (2019). Spatial characteristics and risk factor identification for land use spatial conflicts in a rapid urbanization region in China. *Environmental Monitoring and Assessment*, *191*, 1-22. https://doi.org/10.1007/s10661-019-7809-1

[107] Zhou, G., Liu, L., & Luo, S. (2022). Sustainable development, ESG performance and company market value: Mediating effect of financial performance. *Business Strategy and the Environment*, *31*(7), 3371-3387. https://doi.org/10.1002/bse.3089